



Faculty of Computer Science and Information Technology

COFFEE ORDERING SYSTEM

Amira Hanani Binti Abdul Halim (58446)

Bachelor of Computer Science with Honours (Network Computing)

2019

COFFEE ORDERING SYSTEM

AMIRA HANANI BINTI ABDUL HALIM

This project is submitted in partial fulfillment of
the requirements for the degree of
Bachelor of Computer Science and Information Technology

Faculty of Computer Science and Information Technology
UNIVERSITI MALAYSIA SARAWAK
2019

UNIVERSITI MALAYSIA SARAWAK

THESIS STATUS ENDORSEMENT FORM

TITLE COFFEE ORDERING SYSTEM

ACADEMIC SESSION: 2019/2020

(CAPITAL LETTERS)

hereby agree that this Thesis* shall be kept at the Centre for Academic Information Services, Universiti Malaysia Sarawak, subject to the following terms and conditions:

1. The Thesis is solely owned by Universiti Malaysia Sarawak
2. The Centre for Academic Information Services is given full rights to produce copies for educational purposes only
3. The Centre for Academic Information Services is given full rights to do digitization in order to develop local content database
4. The Centre for Academic Information Services is given full rights to produce copies of this Thesis as part of its exchange item program between Higher Learning Institutions [or for the purpose of interlibrary loan between HLI]
5. ** Please tick (✓)

- ☐ CONFIDENTIAL (Contains classified information bounded by the OFFICIAL SECRETS ACT 1972)
- ☐ RESTRICTED (Contains restricted information as dictated by the body or organization where the research was conducted)
- ☒ UNRESTRICTED

Validated by



(AUTHOR'S SIGNATURE)

Permanent Address

NO 12, BANDAR TENGGARA,

81440 KULAI, JOHOR

Date: 10/8/2020



(SUPERVISOR'S SIGNATURE)

Dr. Mohamad Imran bin Bandan
Postgraduate Coordinator
Faculty of Computer Science and Information Technology
Universiti Malaysia Sarawak

Date: 13/10/2020

Note * Thesis refers to PhD, Master, and Bachelor Degree

** For Confidential or Restricted materials, please attach relevant documents from relevant organizations / authorities

DECLARATION

I hereby declare that this project is my own work. I have not copied from other people's work and any ideas or quotation from the work of others, published or otherwise are fully acknowledged with standard referencing practices of discipline.



.....
(AMIRA HANANI BINTI ABDUL HALIM)

Faculty of Computer Science and Information Technology

Universiti Malaysia Sarawak

ACKNOWLEDGEMENT

Alhamdulillah, praises and thanks to Allah because of His Almighty and His utmost blessings, I was able to finish this final year project report. Special thanks for my supervisor, Dr Mohamad Imran Bin Haji Bandan for the patience in guiding and helping me throughout this project and constructive comments for me to complete this project.

Next, I would like to grab this opportunity to express my gratefulness and thankfulness to my beloved parents, Abdul Halim Bin Abdul Aziz and Rohana Binti Nadir, and all the family members for their love and support throughout this whole process.

Lastly, I would like to give my thankfulness to all my friends who have helped me with the development of this project. Without supporting from you guys, I could not make it.

ABSTRACT

Coffee Ordering System is a web-based system development which it become a platform for the business owner to monitor the business activities and history. In this context, this ordering system will help the business owner to keep track the customer orders in a digital way. Therefore, the business owner will be able to view their customer orders without any problem and able to focus on the production and maintaining the quality of the product based on the customer experience.

ABSTRAK

Sistem Pesanan Kopi adalah sebuah pembangunan sistem berasaskan web dan dijadikan sebagai medium untuk peniaga memantau aktiviti dan perkembangan perniagaan mereka. Dalam konteks ini, sistem pesanan ini akan membantu peniaga untuk merekod pesanan para pelanggan secara digital. Oleh itu, sistem ini dapat membantu peniaga dalam menguruskan pesanan pelanggan mereka tanpa sebarang masalah serta dapat memumpu perhatian sepenuhnya dalam mengekalkan kualiti produk mengikut citarasa para pelanggan.

TABLE OF CONTENTS

Chapter 1: Introduction	1-8
1.1 Introduction	1
1.2 Problem Statement	2
1.3 Scope	3
1.4 Objectives.....	3
1.5 Significance of Project	4
1.6 Project Schedule	4-6
1.7 Expected Outcome	7
1.8 Project Outline.....	7-8
 Chapter 2: Literature Review.....	 9-28
2.1 Introduction	9
2.2 Background Study	9-11
2.3 Review on similar existing system.....	12-23
2.3.1 Kitchen Potion	12-15
2.3.2 Kembara Meals.....	16-19
2.3.3 Domino's Pizza	20-21
2.3.4 Foodpurby.....	22-23
2.4 Comparison between existing systems and proposed system	24
2.4.1 Proposed system	25
2.5 Review on Software Tools	25-27
2.5.1 phpMyAdmin	25-26
2.5.2 XAMPP	26
2.5.3Notepad++	27
2.6 Summary	28
 Chapter 3: Methodology.....	 29-53
3.1 Introduction	29
3.2 Methodology	29-30
3.3 Requirement Analysis	31-38
3.3.1 System Requirement.....	39
3.3.2 Functional Requirement	40-41
3.4 System Architecture & Design.....	42
3.5 Context Diagram	43

3.5.1 Data Flow Diagram Level 0	44
3.5.2 Data Flow Diagram Level 1	45-46
3.6 Entity Relationship Diagram	47-48
3.7 Interface Design	49-52
3.8 Summary	53
Chapter 4: Implementation.....	54-62
4.1 Introduction	54
4.2 System Implementation.....	54
4.3 Overview of System	54-62
4.3.1 User Roles	55
4.3.2 Functions and Features	55-62
4.4 Summary	63
Chapter 5: System Testing	64-71
5.1 Introduction	64
5.2 Functional Testing.....	64
5.2.1 Test Case	65-68
5.3 Non-Functional Testing.....	68-69
5.3.1 Usability of System	68-69
5.3.2 Ease of Use and User Satisfaction	70
5.4 Summary	71
Chapter 6: Conclusion and Future Works	72-73
6.1 Introduction	72
6.2 Objectives and Achievements	72
6.3 Limitations	73
6.4 Future Works	73
6.5 Summary	73
References.....	74-75
Appendices.....	76-81

LIST OF FIGURES

Figure 1.1: Final Year Project 1 Schedule	6
Figure 1.2: Final Year Project 2 Schedule.	7
Figure 2.1: Total coffee consumption in Malaysia from 2009 until 2018.	10
Figure 2.2: Home Page of Kitchen Potion Website	12
Figure 1.3: Pay Now to proceed payment.....	12
Figure 2.4: Step 1: Confirm Order	13
Figure 2.5: Step 2: Shipping Address	14
Figure 2.6: Step 3: Confirm Payment	14
Figure 2.7: Flowchart of flow Kitchen Potion.	15
Figure 2.8: Kembara Meals Main Page.	16
Figure 2.9: Login Page of Kembara Meals.	16
Figure 2.10: View the product.	17
Figure 2.11: Cart of the ordered product.	18
Figure 2.12: Placement order of Kembara Meals..	18
Figure 2.13: Flowchart of Kembara Meals	19
Figure 2.14: Home Page of Domino's Pizza Online Order	20
Figure 2.15: Flowchart of Domino's Pizza Online Order System.....	21
Figure 2.16: Home Page of Foodpurby.....	22
Figure 2.17: Flowchart of Foodpurby	23
Figure 2.18: Interface of phpMyAdmin	26
Figure 2.19: XAMPP Software	26
Figure 2.20: Notepad++ source code editor	27
Figure 3.1: Rapid Application Development (RAD) methodology	30
Figure 3.2: Gender of respondents	31
Figure 3.3: Age of respondents.....	32
Figure 3.4: Respondents drink coffee	32
Figure 3.5: Respondents' frequently buy coffee.....	33
Figure 3.6: Respondents know Arristo Italian Coffee	33
Figure 3.7: Respondents drink Arristo Italian Coffee.....	34
Figure 3.8: Respondents get their coffee	34
Figure 3.9: Respondents preference to order coffee through proposed system.....	35
Figure 3.10: Respondents experience of do not get their order	35
Figure 3.11: Respondents method to keep the order list.....	36
Figure 3.12: Respondents opinion on coffee ordering system.....	36

Figure 3.13: Respondents method to keep the order list.....	37
Figure 3.14: Summary of the functionalities of Coffee Ordering System.....	37
Figure 3.15: Respondents thought the system will increase the revenue	38
Figure 3.16: System Architecture of Coffee Ordering System.....	42
Figure 3.17 Context diagram of Coffee Ordering System.....	43
Figure 3.18: Level 0 of Coffee Ordering System	44
Figure 3.19: Processing the customer details.....	45
Figure 3.20: Process of customers registration	45
Figure 3.21: The process of placement order.....	46
Figure 3.22: The process of view report order.....	46
Figure 3.23: Entity Relationship Diagram of Coffee Ordering System.....	47
Figure 3.24: Login page of ordering system.....	49
Figure 3.25: Dashboard of ordering system.....	50
Figure 3.26: Total Order Report.	50
Figure 3.27: Customer Order Volume	51
Figure 3.28: Sales Report.....	51
Figure 3.29: Interface design for the customer	52
Figure 4.1: Register and Login page of customer.....	56
Figure 4.2: Menu page of customer	57
Figure 4.3: The details of customer order.....	58
Figure 4.4: The history order details.....	58
Figure 4.5: The customer user details	58
Figure 4.6: Admin login page	59
Figure 4.7: Admin dashboard.	59
Figure 4.8: Order list record by day	60
Figure 4.9: Order list record by week	60
Figure 4.10: Order list record by month	60
Figure 4.11: Customer Order Volume	61
Figure 4.12: Sales Report.....	61
Figure 4.13: Email notification	62
Figure 4.14: Customer receives notification through email.....	62
Figure 5.1: Results ease of use of the system based on end-users' perspectives.	69
Figure 5.2: Result of user satisfaction toward the overall system	69

LIST OF TABLES

Table 2.1: Differences features of the existing systems and proposed system	24
Table 3.1: Hardware Specifications	39
Table 3.2: Software Requirements	39
Table 3.3: Table Admin	48
Table 3.4: Table Customer	48
Table 3.5: Table Order	48
Table 4.1: Types of users and its roles.	55
Table 5.1: Test the login function for the admin and customer web-based system.....	65
Table 5.2: Test the logout function for both end-users.....	65
Table 5.3: Test to add the selected item into the cart.	66
Table 5.4: Test to remove the item from the car.....	66
Table 5.5: Test for place an order	66
Table 5.6: Test for view place order	67
Table 5.7: Test for view order details and report from admin part.....	67
Table 5.8: Test for sending promotion using php mailer.....	68
Table 5.9: Results of usability of the web-based system for customer user	68
Table 5.10: Results of usability of the web-based system for admin	69
Table 6.1: The system objectives and achievement	72

CHAPTER 1

INTRODUCTION

1.1 Introduction

Online business is a golden opportunity for those who looking for side income as technology has risen throughout the years. Anyone can easily set up an online business in a couple of minutes and start selling their product virtually. The author said that the functioning and bringing in revenue or sometimes a lot of revenue is now possible for a small business even though without opening a physical office (Elias, 2017). The power of viral through the internet by promoting the product also helps a lot for the community to grow their businesses. The only things that you need to reach the audiences are the internet connection and website.

Kopi Itali (Italian Coffee) is a premium coffee whereby it uses Arristo Coffee Machine. This machine can be rented only RM1.00 per month follow the terms and conditions. The packaging of the coffee powder comes in a capsule form that specially created for this machine. Instead of using this machine for our own, it is optional to make it as a platform to make extra money by selling the Italian Coffee.

The placement order is usually done by the entrepreneur through Whatsapp and Facebook. The entrepreneur will jot down the order list in a piece of paper based on the customers' request. Listing out the order that has been taken in a piece paper causes data loss and human error. Based on this problem we purpose to design and develop a web-based system to overcome this situation.

1.2 Problem Statement

Business nowadays can be done easily compare to past time due to the presence of various social media. The author stated that online marketing is one of the most versatile and economic approaches for small businesses to utilize and raise their revenues over the time to their target audience (Smith, 2019). Besides, smartphone ownership also becomes one of the factors that business can be done by these days through the internet connection. According to Statista, the number of smartphone users across the world increases rapidly as in 2019 has 3.3 billion smartphone users (Holst,2019). Currently, the entrepreneur used Facebook and WhatsApp as to promote and sell their product to the customer. The entrepreneur prefers the conventional method to collect and keep the order record by writing up in a piece of paper or notebook. The tendency to loss the manual record and misplaced the order is higher. Furthermore, the entrepreneur seems to have overlooked the customer order from Whatsapp and Facebook because a lot of customers need to be managed at one time. This shown that the entrepreneur does not have a better database management system to keep track the order record.

1.3 Scope

Coffee Ordering System is targeted the business owner which it is using a web-based system platform. The main function of this system is to ensure the business owner can collect and keep track the customers' order in a computerised system. Besides, the customer will place an order through web-based platform. Therefore, the user is divided into two types; the customer who can place the order and the business owner who can monitor the order list through the web-based system.

1.4 Objectives

Based on this project, there are three objectives that highlighted to help the entrepreneur as stated below.

- To design a web-based system for the business owner to keep track of the customers' orders.
- To design a reporting function for the view of order report, customer report and sales report.
- To test the proposed system based on functionality testing.

1.5 Significance of Project

The significance of this project is to ensure that the entrepreneur will have a better version of business management as well as revenue. According to a study by Cornell University's School of Hotel Administration, after introducing an online ordering system, most of the restaurants and hotels experienced "significant increases in order frequency" (Stephens, 2018). Increasing the efficiency of taking the customers' orders and monitoring the order list can be done through the online ordering system rather than taking the order in a piece of paper. This online ordering system will reduce manpower whereas everything is automatically taken by the system. No more issue will arise such as the customer does not get their order. It happened because of human error in handling the customers' order.

With the leverage of computerized system will boost up the business revenue from time to time. It will help the entrepreneur to fulfil the customers' needs. Throughout the pattern of the customers' order, it will illustrate what type of coffee that is high demand, and which is otherwise. From this analysis, the business owner can find out the weaker areas to improve the quality of the product. Thus, customer satisfaction is the key to be successful in business.

1.6 Project Schedule

In this section, there are two project schedule included which for Final Year Project 1 and Final Year Project 2. Both of the schedule in Figure 1.1 and Figure 1.2 are illustrated using gantt chart. Microsoft Project is used to create the gantt chart and it will be the guidance for the development of this proposed solution.

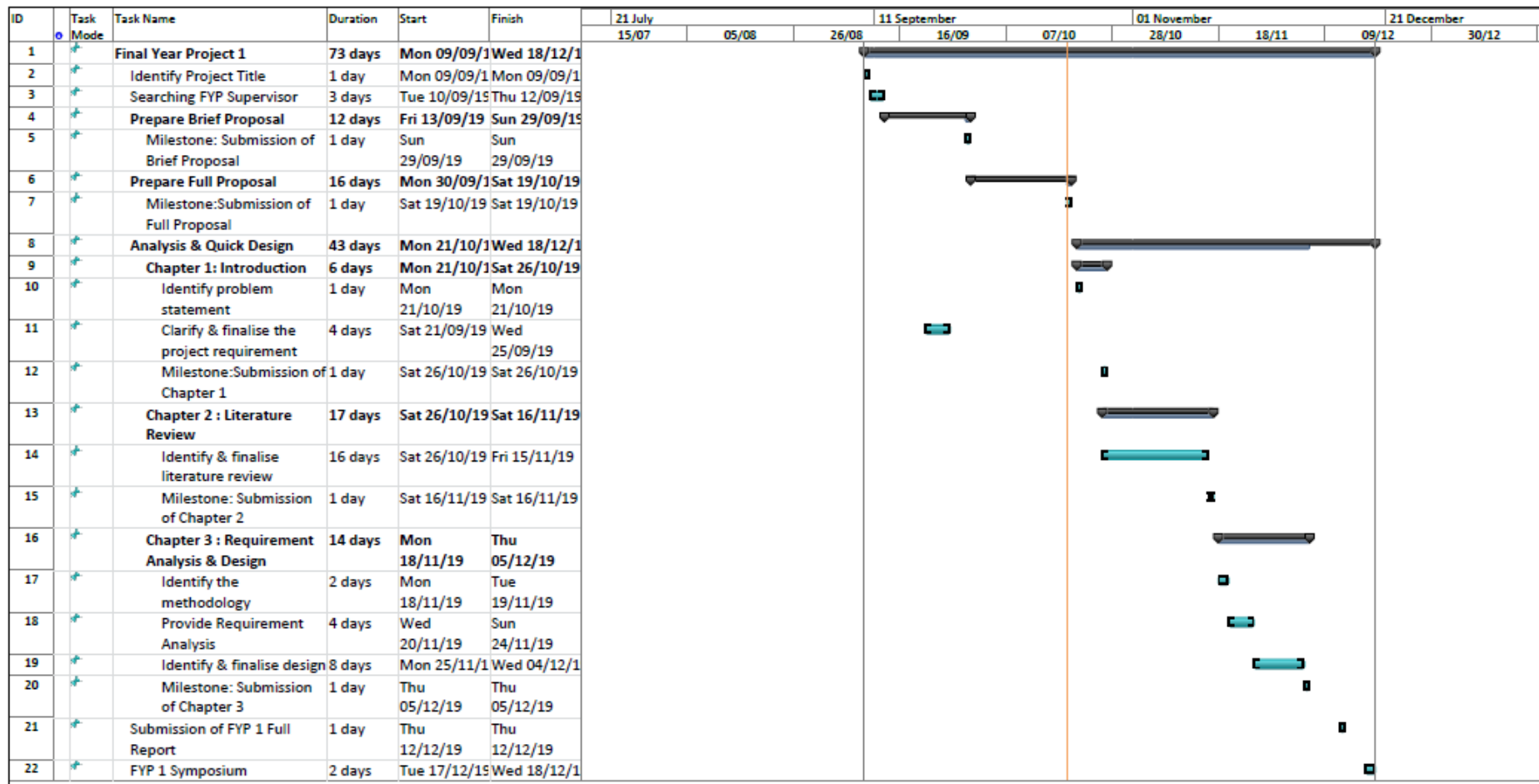


Figure 1.1: Final Year Project 1 Schedule.

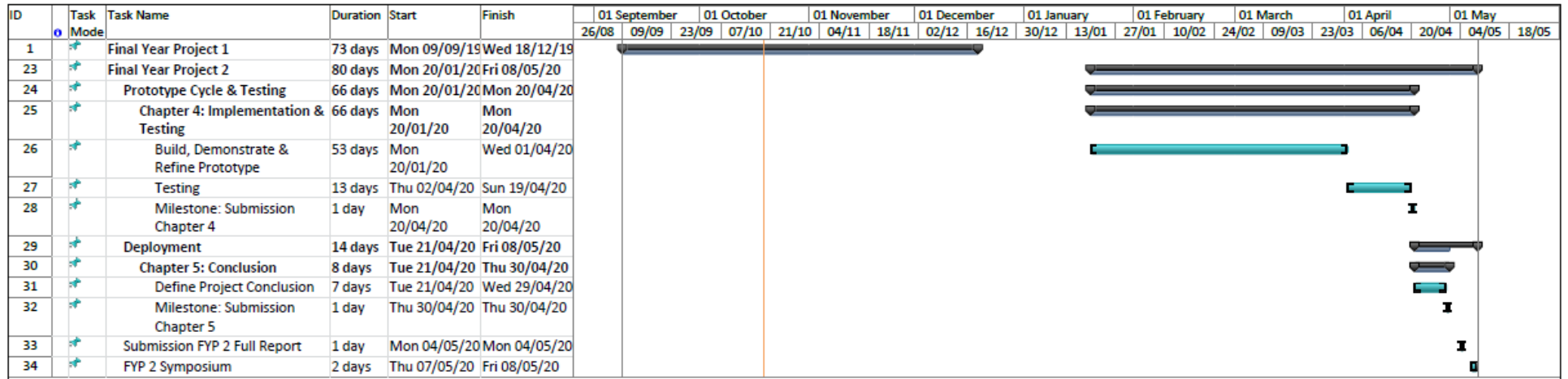


Figure 1.2: Final Year Project 2 Schedule.

1.7 Expected Outcome

The outcome of this project is to design and develop an online ordering system that can help the business owner to capture the customer orders using computerized system to have a better management system. The benefit of using computerized system in business is it helps a lot in reducing the time spent on the manual processes. Besides, computerized system also lessens in error handling and increase the accuracy of the business which everything is done by the system. Thus, the entrepreneur can focus more on the production and maintaining the quality of the product.

1.8 Project Outline

Project outline is used as a review all the progress for this project from the beginning until the end. Overall, there are five chapters which three chapters in Final Year Project 1 and others in Final Year Project 2 report. Chapter 1 will focus on the overview of Coffee Ordering System. This overview consists of the introduction, problem statement, project scope, aims and objectives, brief methodology, significance of project, project schedule, expected outcome and project outline. Next, Chapter 2 will cover on the background study of Coffee Ordering System. It will identify on the differences and the similarity between the existing system and this project whereby all the design, benefit and implementation will be considered. The critical discussion will be conducted to criticise and provide ideas on how to overcome the issues. A summary of literature review will be provided in this section. In Chapter 3, it will explain about the methodology used for this project in detail. Besides, the user requirement, functional and non-functional requirement also need to identify to achieve the goals of this project. Then, Chapter 4 is about the real system that will be implemented after the all the prototype is been refined by the user and it met the final requirement for this project. The testing will be conducted after the system is being implemented. Lastly, Chapter 5 will conclude about the overall of this

project such as its achievement, challenges, and recommendations.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter is all about the literature review of the similar existing systems with the proposed system. The review covers the functionalities, advantages, and disadvantages of all the existing systems. A comparison of these existing systems and proposed system also will be included as an overview of the features of the system. Next, this chapter also studies the software tools, to determine which, the most suitable is going to be used for this proposed system.

2.2 Background Study

Coffee was and still is one of the favorite beverages of all times and it has its own history behind its origin. Culturally, Ethiopia and Yemen have their own version of the coffee history and this cultural significance has been found in Yemen and Ethiopia in as many as fourteen centuries (Goodwin, 2019). Coffee is made up of the roasted coffee beans and then it been brewed with hot boiling water. Besides that, there are many types of coffee beans that comes across from different countries such as Arabica, Robusta and Liberica. These coffee beans have different types of flavor due to how it's being processed.

Drinking a cup of coffee will make us feel so refresh and it consists of high antioxidants. Despite containing caffeine, it also related to reducing risk of many diseases. The author (Gunnars, 2018) stated that coffee is rich in antioxidants and provides some nutrients which 240ml cup of coffee contains vitamin B2, vitamin B5, vitamin B1, vitamin B3, Folate, Manganese, Potassium, Magnesium and Phosphorus. Caffeine in the coffee itself helps to improve brain function and metabolism. Many studies show that caffeine is likely to boost brain function in the short term, improving mood, reaction time, alertness and cognitive

function in general (Gunnars, 2018). Besides, studies show that people who regularly drink coffee might have 11% lower risk of getting diabetes than non-drinkers (Park, 2017). This is because of the coffee ingredients that gives impact metabolism hormone levels.

In Malaysia, drink a cup of coffee has been a part of routine especially for the coffee lovers. Figure 2.1 shows that in 2018, about six hundred thousand 60 kg of coffee that has been consumed in Malaysia. Based on the bar chart, the coffee consumption in this country has become a trend since 2012 despite the popularity of the gourmet coffee among the younger consumer (Hirschmann, 2019).

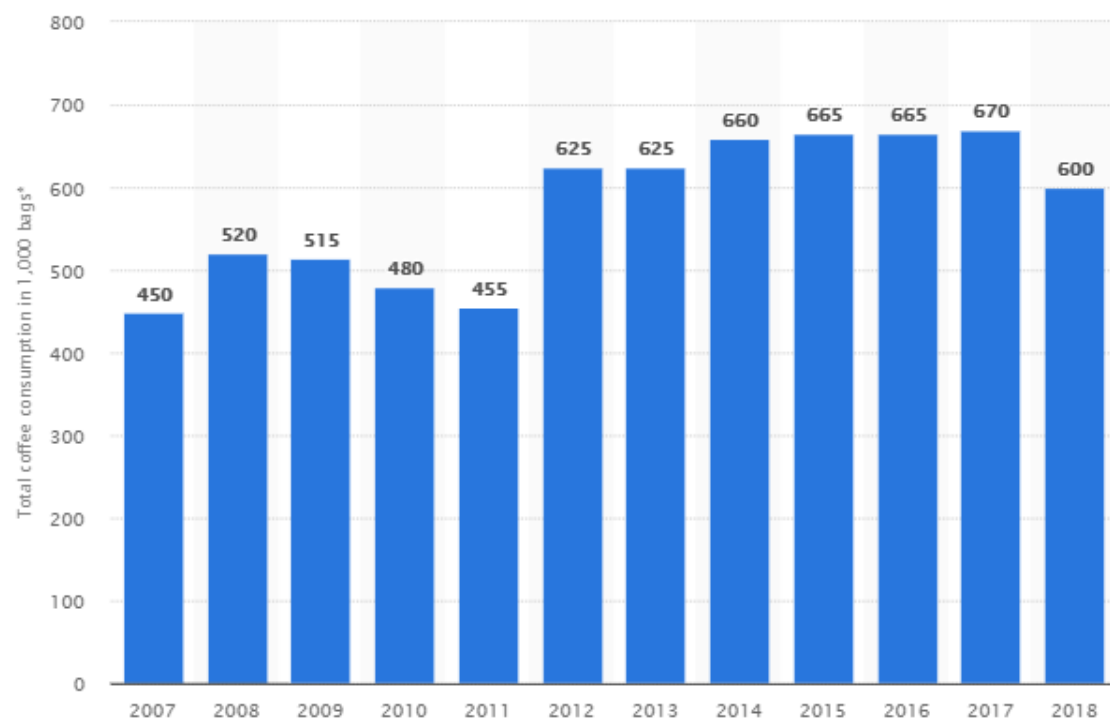


Figure 2.1: Total coffee consumption in Malaysia from 2009 until 2018 (Hirschmann, 2019).

The number of coffee shop in this country is growing from time to time not only Peninsular Malaysia but also in Sabah and Sarawak. Old Town White Coffee and Papa's Coffee are the well-known cafés among the community. Starbucks is the most popular coffee shop and it is so costly. Now, the Arristo Italian Coffee has come across in this country whereby the coffee lovers can get their own coffee from the business owner that sell through social media at a lower cost.

The business owner used Facebook and WhatsApp as a medium to promote and sell their coffee drinks to the targeted customer. Usually, the business owner collects and keep the order manually using a piece of paper. This kind of conventional system can cause a human error while handling the placement order since there is a lot of customers that need to deal with at one time. Some of the customers do not get their order even they already place an order directly to the business owner. This thing frequently happened because the business owner always missed to list out the order. Moreover, the possibility of a loss of the order list is also high. Therefore, this show that the business owner does not has a good management system in handling the customer order.

Coffee Ordering System is using a web-based platform for the business owner. The main objective of the coffee ordering system is basically to replace the conventional system into a computerized system for the business owner to keep track of the customer order. Next, the proposed system also will provide reporting module of the customer orders. It illustrates a meaningful insight for the business owner based on the pattern of the customer orders. Thus, these kinds of features of the proposed system will help the business owner to overcome the problems and improve the business revenue.

2.3 Review on similar existing systems

This section reviews on the similar existing systems with the proposed system according to its features. There are three existing systems for customer side and one existing system for the business owner side.

2.3.1 Kitchen Potion

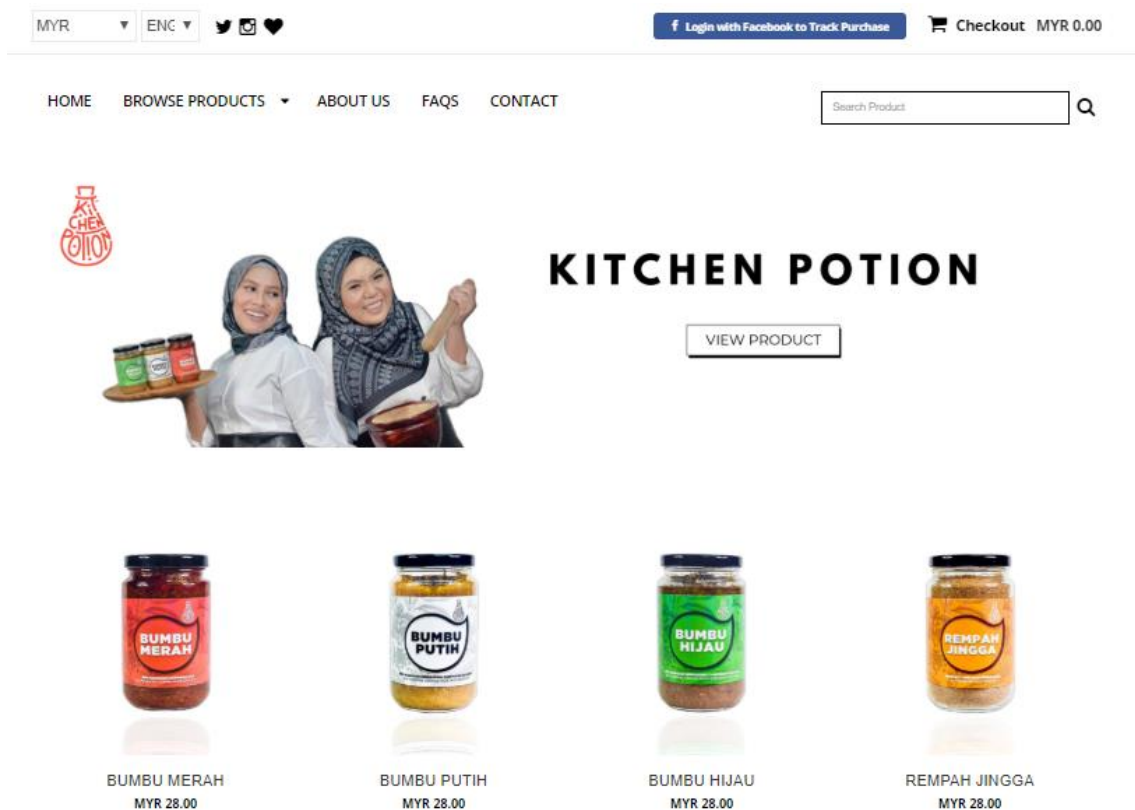


Figure 2.2: Home Page of Kitchen Potion Website (Kitchen Potion Online Store, n.d.).

Kitchen Potion is a web-based system that sells a variety of premium instant paste has a very simple interface. All the product is displayed at the main page of Kitchen Potion website including the price per unit. This system does not have any registration and the login function that has been applied for the end-user. Next, the end-user can directly choose the item by clicking on the add to cart button. To proceed the payment, the end-user needs to click on pay now button at the top corner of the website as shown in Figure 2.2.